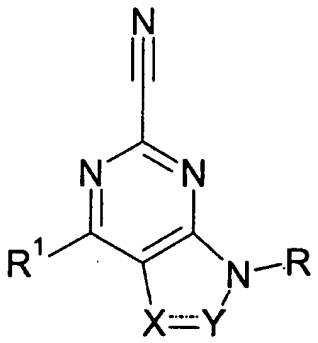
CLAIMS

1. A compound of formula (I):



(I)

in which:
X is N, NH, :CH or CH_2;
Y is N, :CH, CO, CH_2 or :CNR^2R^3, where R^2 and R^3 are independently hydrogen, C_{1-6} alkyl or C_{3-6} cycloalkyl;

R is aryl or heteroaryl optionally substituted by halogen, amino, hydroxy, cyano, nitro, trifluoromethyl, carboxy, $CONR^5R^6$, $SO_2NR^5R^6$, SO_2R^4, $NHSO_2R^4$, $NHCOR^4$, ethylenedioxy, methylenedioxy, C_{1-6} alkyl, C_{1-6} alkoxy, SR^4 or NR^5R^6 where R4 is hydrogen, C_{1-6} alkyl or C_{3-6} cycloalkyl, R^5 and R^6 are independently hydrogen, C_{1-6} alkyl or together with the nitrogen atom to which they are attached form a 5- or 6-membered saturated ring optionally containing a further O, S or NR^4 group;
or R is hydrogen, C_{1-6} alkyl or C_{3-6} cycloalkyl both of which can optionally contain one or more O, S or NR^4 groups,

R^1 is a group $Y(CH_2)pR^7$ where p is 0, 1 or 2 and Y is O or NR^8 where R^8 is hydrogen, C_{1-6} alkyl or C_{3-6} cycloalkyl;
and R^7 is a 5- or 6-membered saturated ring containing one or more O, S or N atoms, aryl or a heteroaryl group containing one to four heteroatoms selected from O, S or N, the saturated ring, aryl and heteroaryl groups all being optionally substituted by halogen,

amino, hydroxy, cyano, nitro, trifluoromethyl, carboxy, $CONR^5R^6$, $SO_2NR^5R^6$, SO_2R^4, $NHSO_2R^4$, $NHCOR^4$, C_{1-6} alkyl, C_{1-6} alkoxy, SR^4 or NR^5R^6 where R4 is hydrogen, C_{1-6} alkyl or C_{3-6} cycloalkyl, R^5 and R^6 are independently hydrogen, C_{1-6} alkyl or together with the nitrogen atom to which they are attached form a 5- or 6-membered saturated ring optionally containing a further O, S or NR^4 group;

or R^1 is a group NR^9R^{10} where R^9 and R^{10} are independently hydrogen or C_{1-6} alkyl optionally containing one or more O, S or NR^4 groups, or R^9 and R^{10} together with the nitrogen atom to which they are attached form a 5 or 6-membered saturated ring optionally containing a further O, S or N atom and optionally substituted by NR^9R^{10}, CO_2C_{1-6} alkyl, $CONR^{11}R^{12}$ where R^{11} and R^{12} are independently hydrogen or C_{1-6} alkyl, aryl or heteroaryl group optionally substituted by halogen, amino, hydroxy, cyano, nitro, trifluoromethyl, carboxy, $CONR^5R^6$, $SO_2NR^5R^6$, SO_2R^4, $NHSO_2R^4$, $NHCOR^4$, C_{1-6} alkyl, C_{1-6} alkoxy, SR^4 or NR^5R^6 where R4 is hydrogen, C_{1-6} alkyl or C_{3-6} cycloalkyl, R^5 and R^6 are independently hydrogen, C_{1-6} alkyl or together with the nitrogen atom to which they are attached form a 5- or 6-membered saturated ring optionally containing a further O, S or NR^4 group;
and pharmaceutically acceptable salts or solvates thereof.

2. A compound according to claim 1 in which X is N and Y is :CH, X and Y are:CH or X and Y are CH_2

3. A compound according to claim 1 or 2 in which R is C_{1-4}alkyl, or phenyl substituted by halogen, SO_2Me, C_{1-6}alkoxy or C_{1-4}alkyl.

4. A compound according to any one of claims 1 to 3 in which R^1 is a group $Y(CH_2)pR^7$ where p is 0 and Y is NR^8 where R^8 is hydrogen and R^7 is substituted phenyl.

5. A compound according to any one of claims 1 to 3 in which R^1 is NR^9R^{10} where R^9 and R^{10} are hydrogen or C_{1-3} alkyl or together with the nitrogen atom to which they are attached form a 5 or 6-membered saturated ring optionally containing a O, S or NR^4.

6. A compound of formula (I) selected from:
1-[9-(4-Chlorophenyl)-2-cyano-9H-purin-6-yl]-L-prolinamide,
9-(4-Chlorophenyl)-6-(4-pyrrolidin-1-ylpiperidin-1-yl)-9H-purine-2-carbonitrile,
9-(4-Chlorophenyl)-6-[(3-pyrrolidin-1-ylpropyl)amino]-9H-purine-2-carbonitrile,
6-(4-Aminopiperidin-1-yl)-9-(4-chlorophenyl)-9H-purine-2-carbonitrile,

6-[(2-Aminoethyl)amino]-9-(4-chlorophenyl)-9H-purine-2-carbonitrile,
9-(4-Chlorophenyl)-6-(dimethylamino)-9H-purine-2-carbonitrile,
9-(4-Methylphenyl)-6-pyrrolidin-1-yl-9H-purine-2-carbonitrile,
9-(4-Methoxyphenyl)-6-pyrrolidin-1-yl-9H-purine-2-carbonitrile,
9-(4-chlorophenyl)-6-pyrrolidin-1-yl-9H-purine-2-carbonitrile,
9-(4-Chlorophenyl)-6-(ethylamino)-9H-purine-2-carbonitrile,
tert-Butyl 4-[9-(4-chlorophenyl)-2-cyano-9H-purin-6-yl]piperazine-1-carboxylate,
9-(4-Chlorophenyl)-6-piperazin-1-yl-9H-purine-2-carbonitrile,
9-(2-Chlorophenyl)-6-morpholin-4-yl-9H-purine-2-carbonitrile
9-(3,4-Difluorophenyl)-6-morpholin-4-yl-9H-purine-2-carbonitrile,
9-(4-Isopropylphenyl)-6-morpholin-4-yl-9H-purine-2-carbonitrile,
9-(4-Methoxyphenyl)-6-morpholin-4-yl-9H-purine-2-carbonitrile,
9-(3-Chlorophenyl)-6-morpholin-4-yl-9H-purine-2-carbonitrile,
9-[4-(Methylsulfonyl)phenyl]-6-morpholin-4-yl-9H-purine-2-carbonitrile,
6-[(4-Chlorophenyl)amino]-9-ethyl-9H-purine-2-carbonitrile,
9-(4-Chlorophenyl)-6-morpholin-4-yl-9H-purine-2-carbonitrile,
8-Amino-6-[(4-chlorophenyl)amino]-9-ethyl-9H-purine-2-carbonitrile,
8-Amino-9-(4-chlorophenyl)-6-morpholin-4-yl-9H-purine-2-carbonitrile,
9-(4-Chlorophenyl)-6-morpholin-4-yl-8-oxo-8,9-dihydro-7H-purine-2-carbonitrile,
9-(4-Chlorophenyl)-8-(dimethylamino)-6-morpholin-4-yl-9H-purine-2-carbonitrile,
7-(4-Chlorophenyl)-4-morpholin-4-yl-7H-pyrrolo[2,3-d]pyrimidine-2-carbonitrile,
7-(4-Chlorophenyl)-4-(ethylamino)-7H-pyrrolo[2,3-d]pyrimidine-2-carbonitrile,
4-[(4-Chlorophenyl)amino]-7-ethyl-7H-pyrrolo[2,3-d]pyrimidine-2-carbonitrile,
1-[7-(4-Chlorophenyl)-2-cyano-6,7-dihydro-5H-pyrrolo[2,3-d]pyrimidin-4-yl]-L-prolinamide,
1-[2-Cyano-7-(4-methoxyphenyl)-6,7-dihydro-5H-pyrrolo[2,3-d]pyrimidin-4-yl]-L-prolinamide,
7-(4-Methoxyphenyl)-4-pyrrolidin-1-yl-6,7-dihydro-5H-pyrrolo[2,3-d]pyrimidine-2-carbonitrile,
7-(4-Methoxyphenyl)-4-morpholin-4-yl-6,7-dihydro-5H-pyrrolo[2,3-d]pyrimidine-2-carbonitrile,
1-(4-Methylphenyl)-4-morpholin-4-yl-1H-pyrazolo[3,4-d]pyrimidine-6-carbonitrile,
and pharmaceutically acceptable salts thereof.

7. A compound of formula (I) as defined in any one of claims 1 to 6 for use in therapy.

8. A compound of formula (I) as defined in any one of claims 1 to 6 for use in the treatment of pain.

9. A compound of formula (I) as defined in any one of claims 1 to 6 for use in the treatment of neuropathic pain.

10. A pharmaceutical composition which comprises a compound of the formula (I) as defined in any one of claims 1 to 6 or a pharmaceutically acceptable salt thereof and a pharmaceutically acceptable diluent or carrier.

11. A method for producing inhibition of a cysteine protease in a mammal, such as man, in need of such treatment, which comprises administering to said mammal an effective amount of a compound as defined in any one of claims 1 to 6, or a pharmaceutically acceptable salt thereof.

12. A method for treating pain, such as neuropathic pain, in a mammal, such as man, in need of such treatment, which comprises administering to said mammal an effective amount of a compound as defined in any one of claims 1 to 6, or a pharmaceutically acceptable salt thereof.

13. Use of a compound of the formula (I) as defined in any one of claims 1 to 6 or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for use in the inhibition of Cathepsin S in a warm blooded animal, such as man.